

On Formation &c of Animal Bodies &c.

By Joseph Taylor

Whitby

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THOUGHTS

ON THE

PRODUCTION AND FORMATION

OF

ANIMAL BODIES, &c.

WITH THE NATURAL CAUSE OF THE

RECOVERY OF PERSONS APPARENTLY
DEAD BY DROWNING;

AND

MANY OTHER THINGS WORTHY
OF NOTICE:

By JOSEPH TAYLOR.

WHITBY:

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AND TO BE HAD OF

HELTUS, STOCKTON; APPLETON, DARLINGTON; LANGDALE,
NORTHALLERTON; WATSON, KIRBYMOORSIDE; SAGG,
MALTON; SEEVERS, PICKERING; CLARKE
and WEBSTER, WHITBY; LIDDEL,
STOKESLEY; and SCHOFIELD,
SCARBOROUGH.

TO THE

Humane Society.

IT is customary for most authors to dedicate publications of this kind to some great man: But as I am unacquainted with any nobleman, and the subject that attracted my attention, was the natural cause of the recovery of persons apparently dead by drowning (for many things contained herein are only to enlarge); therefore I thought it most expedient to shew the principles or elements that compose the natural body, with the effects of the same, which I have made appear as far as my weak abilities

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ties would permit. To dedicate it to you, was the most agreeable to my feelings, on account of your humanity, and the means you have used to those unhappy persons who have suffered by drowning: And I doubt not but if they were administered to others in similar cases, suspended animation, as specified in the following remarks, would have answered the same end; for it is my opinion, that as many new discoveries may be made in the little world as have been in the great: And I have that confidence in you, and am fully persuaded, that you will not be backward in promoting the same.

TO

TO THE

Learned and Impartial Reader.

I Humbly request you will forgive the imperfections contained in the following sheets, as they are not wrote in the stile of the learned, though I have imitated it to the best of my understanding. Being a poor man, and not much of a scholar, without the assistance of any person, or help of books of philosophy, not even a dictionary, which caused me to be at a loss to find out the true sense and meaning of some words. Being blest with an indifferent good memory, and recollecting what I have formerly read, for of late I have not had much converse with books; but I always had from a boy, a turn for chemistry and natural philosophy, though fortune never favoured me to pursue the study of either of them to advantage. But the following remarks were the result of my thoughts, when

when I was upon the road with only one horse and a cart, by which I got my livelihood. Being disabled in body by misfortunes, and almost reduced to poverty, not knowing how to maintain myself without the assistance of others, my horse being dead, and I not of ability to purchase another;—but now am obliged to ride upon an ass, which I had formerly bought to ride upon when I drove my short team, being so disabled as rendered it difficult for me to walk. Under these circumstances, being partly confined, I resumed my former thoughts, which, when wrote, I communicated to some of my friends, who advised me to publish the same by subscription. According to their request a subscription was opened; and if any things contained therein, be in the least beneficial to my fellow-creatures and acceptable to my readers, I shall be amply rewarded for the pains I have taken in compiling them.

INTRODUCTION.

NOT only the animal, but the vegetable and mineral kingdoms, afford a variety of subjects for the following remarks: For the whole world of sublunary bodies are one and the same composition, powerfully impregnated with fermentative particles, which in every region and corner are in perpetual motion; from whence the production, growth, decrease, and transmutation of bodies depend. Not only in the bowels of the earth, but in the waters, the corpuscles thereof are plentifully diffused; and they are likewise expanded through the whole atmosphere.

Of

Of the Principles or Elements that compose the animal Body.

BY the name of principles, I comprehend the most simple and uncompound particles of matter, by the combination and intestine motion of which, animal bodies are produced and increase. For by a mutual and alternatè separation, they are changed and decrease. The particles which are united to, or separated from those bodies, appear to be spirit, electric fire, and salt, called by chemists the three active principles: To which are added water and earth.

Production and Formation of animal Bodies.

ANIMALS owe their origin to a seminal salt, it being rendered fluid, unites to corpuscles of the spirit and electric fire, which being too much divided or inactive, excites them to motion. Likewise the increase of minerals, the fertility of the earth, and vegetation of plants, are derived from this saline seed, where it finds a convenient receptacle or matrix; and being inclosed therein, principally

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cipally serves for the first formation, not only of animal, but vegetable and mineral bodies. For when those active principles first unite from a state of crudity and confusion, there is a progressive motion, by which they grow and increase.

The Principle of Life and Motion.

THE principle of life and motion is the spirits, which appear to be no other than the electric fire contained in the body, divided by fermentation; in which operation the volatile saline effluvia is conjoined to a portion of the aqueous particles, brought to maturity by nature. The spirits contain the most essential power of that body, thus separated by fermentation; which the great Author of nature constitutes in this world, as the instrument of life, soul, motion, and sense. According to their nature they are always endeavouring to evaporate; and lest the body should be too soon destroyed, they are united to grosser particles, as evidently doth appear by the fainting and swooning of some delicate persons; for when they are in that state, the circulation of the blood ceases, and they appear without sense or motion, until there be a renewal of spirits; by which means, sense and motion return. For this reason I must take the liberty to dissent from the received opinion, that the blood is the life of the body; which

which to the outward senses, appears sound reasoning, for the blood being taken away, it almost instantly expires: But on considering the nature thereof philosophically, it appears the reverse. Now methinks I hear the reader say,—The fellow writes like a fool. Did not one *Harwood*, professor of anatomy, try the experiment upon his pointer dog, by infusing into his veins the blood of a calf? To which I answer,—Be not too rash in passing sentence, and I will make it appear how and by what means the dog recovered, and was restored to life. The blood being the nourishment of the body, when it is deprived thereof, it consequently must die; for if blood were the life, the body would not die so long as it retained it, but life would exist until it was all consumed.

As these remarks may probably fall into the hands of some of more refined sentiments, I shall quote a sentence or two from Scripture, which, I hope, none will oppose:— viz. “The great Creator of the universe first made man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul.”— Now I query what this breath of life was? for it is not the blood. I must own myself ignorant, except it be the volatile saline effluvia of the electric fire contained in the body, that I call spirits, which appears by its action on the aqueous and earthy

particles which compose the body, to be the principle of life.—This Scripture is so clear, that it confirms my belief that the blood is not the life of the body. I do not doubt but if the foregoing remarks be perused with attention, they will evince the truth of my assertion; which is, that the spirits are the life of the body; and how far the circulation of the blood depends thereon, I shall not in this place pretend to determine: But thus much we know, that as the spirits fail, the circulation of the blood becomes slow and languid; and when the vital spirits are exhausted, the circulation thereof ceases, and life no longer exists; as is evidently demonstrated by the recovery of persons apparently dead by drowning, whose blood doth not circulate 'till their spirits are renewed, for until then all the means in the world would prove ineffectual to recover them, or restore the circulation. But how and by what means the vital spirits are renewed, I shall make appear in another place.

It is also apparent that sense and feeling are derived from the spirits; for if any member of the body be benumbed, or tending to a mortification, so as to be deprived of its office destined by Nature; and if it be taken off by amputation, there is no sense or feeling, except the operation be performed further than the diseased part: By which it
appears

appears there is a deficiency of spirits in that part, to force the blood to circulate. By them the bonds of mixture are preserved, and they check the inordinate motions of salt and electric fire. The perfection of all things consists in a plenitude and exaltation of spirits; their changes and declinations to their loss and deficiency.

Of the Growth of the animal Body to its Stature and Perfection.

THE animal body arrives to its stature by the progressive motion of the active principles. They being united with earth and water, fill by their interposition those void places; and expand and enlarge the limits of the body, being otherwise too imperfect and contracted. For the elementary particles being naturally urged into motion, the subtle and more active are every way expanding and endeavouring to evaporate: But as they are entangled with the grosser, are detained in their flight. In the mean time, the grosser particles being very much attenuated by the conflict and expansion of the subtle, until the body be arrived to its most exalted stature and perfection; of which the electric fire and spirits are principal agents. It is therefore necessary to treat of the nature thereof,

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which is of a grosser consistence than that of spirits, and is also very active, though less subtle; yet is of greater energy and power: For unless it be restrained, the particles thereof are inseparably detained by the intervention of other principles, and not only quits the body, but by too impetuous an eruption destroys it; which is evident in violent passions of anger, &c. The particles thereof, with the spirits, begin to display themselves, and being more closely united, remarkably exceed the other principles; and by their motion evaporate the superfluous humidity; occasioning a warm disposition, active qualities, a vegetative power, and maturity to bodies; which exaltation of electric fire is demonstrated in ripe fruit, and the florid constitution of animals.

Duration of the animal Body.

THE duration of an animal body consists in the principle or element of salt, which is of a more fixed nature than either spirit or electric fire; neither is it so apt to evaporate; but contributes to the union, solidity, weight, and duration of bodies. It hinders their dissolution, and very much prevents putrefaction; inasmuch as it fixes in its embraces and detains in its parts the spirit and electric fire, which would otherwise be endowed with too great a volatility.

Effects

Effects of the Principles or Elements of an animal Body.

HAVING separately treated of the principles or elements of the natural body, it now remains that I proceed to demonstrate the causes and effects of their affinity ; because there is such an agreement, that they are never separated from each other, but upon emergencies : By the mutual cohesion of some, and the vast disparity of others, such different effects are produced, that the knowledge thereof very much illustrates my theory. Between the spirits and electric fire there is some affinity and similitude of parts, which in both are very active and easily divided, as almost daily experience testifies, by persons drowned, those in fits, and such as apparently die suddenly ; or in fevers, when the vital spirits are unexpectedly exhausted ; and many other violent and sudden cases. I believe that most of the persons who languish under such deplorable circumstances, might be recovered, were proper means used in time. But you will say,—How can that be effected, when they are to all appearance dead ? To which I answer,—Though the vital spirits are exhausted, the electric fire contained in the body doth not so readily evaporate ; for the corpuscles thereof being entangled by salt and earth, remain fixed and immovable for some time. Where timely assistance can be procured, and proper means

used,

used, as electricity, friction, warmth, &c; or any other way to agitate and set at liberty the electric fire thus confined; when it is by these means disengaged, a fermentation is begun previous to the first; the vital spirits are renewed; the lungs (which are the animal bellows) begin to play, and fan or blow the electric fire, that a fermentation be kept up or continued; the motion or pulsation of the heart ensues; the blood begins to circulate; life and motion appear; and they recover: And it is my belief, that this is the natural cause of the recovery of persons apparently dead by drowning, &c.

WHEN thus writing, I am sorrowfully affected, under a sense of the great loss sustained, not only to individuals, but society in general, of those unhappy sufferers who have fallen victims to the devouring jaws of death. And I do sympathize with my fellow-creatures in their afflictions; parents for the loss of their children,—children their parents; the husband his wife,—the wife her husband, snatched from their friends and acquaintance, like untimely fruit plucked from the tree before it be wholly ripe.

I am afraid many more will inevitably perish, if means be not used; especially in populous towns, where they cannot breathe a free air; it being, as it were, poisoned by the exhalations which arise, that many are suffocated thereby: And I verily believe,

lieve, that numbers of the young and middle-aged, who fall under these circumstances, while the elementary particles are in their fermentative vigour, might be restored, if the legislative power would appoint men of experience and judgment to inspect the dead. Were such measures adopted, they might be the means of rescuing numbers from being interred, who might been recovered. There have been many instances of this kind, where the electric fire has broke forth of its own accord, just in time to convince the beholders of the great injury they are committing to the persons under these circumstances.

THE electric fire is somewhat similar to the culinary or natural fire ; which, being overloaded with combustible matter, so that not one spark doth appear, suddenly breaks forth into flame ; which amazes all who see it. We have frequent accounts of others being interred before the electric fire breaks forth ; by their groans being heard, the graves have been opened, and some recovered ; while others, when they came to breathe a free air, instantly expired. For those reasons I think there are none who have the least feeling for the sufferings of their fellow-mortals, but will be sorrowfully affected for the loss of so many of the king's most loyal and obedient subjects ; for it is my belief that more perish by the aforesaid ways, than by the sword.

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I shall

I shall now perform my promise respecting *Harwood* and his pointer dog, as much hath appeared in the public papers on the subject, and it has been deemed an anatomical novelty. For my part, I should not have been surpris'd to have heard of the animals' being restored to life, by infusing a warm liquid of any kind, that is of a balsamic nature, as artificial food for the veins, in place of the blood, it being the nourishment of the body; and a liquid as above recited, would be a substitute for the want thereof, which I doubt not would answer the same end, as it had not to intermix with the blood; for I think that is impossible. Where the motion of the heart continues, though life be despaired of, yet if it were administered at the mouth, when it had passed the stomach might circulate, and answer a good end. You will say,—This is a comical fellow: But odd as it may appear, if any ingenious anatomist would try the experiment, and it were found to answer the end intended, it might prove of infinite benefit in wounds, amputations, &c, where the veins have sustained a great loss of blood. As the dog was recovered and restored to life by infusing into his veins the blood of the calf, it appears that he retained his native or natural heat, when the transfusion took place; the electric fire contained in his body, not being much entangled by salt and earth, a fermentation was instantly begun; and as the infusion was continued, the animal spirits were restored,

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the lungs (as was mentioned before) began to play, that there might be a continual ferment, the pulsation of the heart ensued, the blood began to circulate, life and motion appeared, and he recovered. As the restoration of the dog depended on the blood, it must be by this way: For how was it possible for him without the influx of the animal spirits, to cause the lungs to exercise their office, and the heart to remit its pulsations, by any other means? Therefore it is evident that the motion of the heart and circulation of the blood, depend upon the influx or accension of the animal spirits.

THERE has appeared in a public print two remarkable cases, something similar to the above, which I shall relate; *viz* “That the transfusion or
“infusion of a liquid into the veins of an animal,
“is an old experiment, and has been practised with
“success more than a century past. But when the
“celebrated Dr. *Lower* tried it, he had in view this
“great object,—to know whether the motion of the
“heart depended on the influx of the animal spirits,
“or on the accension and dilatation of the blood
“in its ventricles; and not merely to find out whe-
“ther the blood of a calf could be conveyed into
“the veins of a dog. I have the authority of Dr.
“*Gibson*, whose works are valuable, as well from
“their scarcity as for their excellence, to say, That
“Dr. *Lower* above one hundred and fifty years ago,
“in order to prove that the accension and conse-

“quent dilatation of the blood, was not the sole
 “cause of the pulsation of the heart, drew out of the
 “jugular vein of a dog about one half of his blood,
 “injecting by turns into the crural vein, a like
 “quantity of beer mixed with a little wine; and
 “this he repeated, until the blood was exhausted,
 “and the veins contained nothing but the beer and
 “wine; so that the liquid appeared like water in
 “which raw flesh had been washed, or rather like
 “water tinged with claret. During this state, he
 “says, the heart remitted none of its former pul-
 “sations. This is a more extraordinary infusion
 “than the transfusion lately mentioned, and cer-
 “tainly furnishes the idea of the dog, &c.”

“Dr. *Gibson* relates another fact somewhat similar
 “to this, as a collateral proof respecting the pulsa-
 “tion of the heart. He states, that a youth about
 “two years old, continued bleeding for two days
 “together; that fearing death must be the inevitable
 “consequence, as the blood could not be stopped,
 “a large quantity of broth was given him; and as
 “he swallowed the broth, the bleeding increased,
 “insomuch that the whole mass of blood was ex-
 “hausted from the veins, and nothing came out but
 “what was pale and dilute; neither of the nature
 “or colour of blood, but actually resembled both
 “in appearance and taste, the broth of which he
 “had drank so plentifully. He adds, that this kind
 “of flux continued for two days; and during that
 “time

“time the heart retained its usual pulsation. So long as the flux continued, the patient drank the broth; when it stopped, he took coarser diet; and by degrees was restored to his health, and grew a robust, healthy man.”

“THE general knowledge of this latter fact may prove of infinite service to the world; as it evinces that the loss of blood may be supplied by what I may call artificial food for the veins.”

I mention these two facts in vindication of my assertion; which is, that the blood is the *nourishment of the body*, and *not the life*, as is generally believed.

BUT to return to the various and excellent qualities of the electric fire;—The corpuscles thereof being gently agitated, promotes an appetite and digestion, but being too intensely roused, destroys it, as is evident by unusual and violent exercises of any kind; as hard labour, &c, when no solid food can be taken, but only some liquid substance, to refresh the body and cool the heat that is occasioned thereby; but, being gently moved, by its vivifying heat doth nourish and strengthen the whole body.

THE different dispositions, the beauty and deformity of animal bodies as to their colour, consistence, and shape, are principally dependent on the electric fire: Hence every plant, fruit, and flower, receive

receive those infinite variety of forms, colours, gusts, odors, signatures, and virtues; as also the vast difference in tastes and smells; which appear to be caused by the liquid or fluid called animal spirits, contained in the nerves of the mouth and nostrils; and I believe it to be that fluid in others, which is the cause of sensation in all parts of the body; and the spirits in the nerves aforesaid, being more closely united in some persons than in others, by the compression of other nerves of the same kind.

THE spirits and electric fire also manifest themselves in animals, particularly horses; of which there are so many kinds, and so different in their natures, that one would think them (but by their shape) not of the same species. Some are light, active, and lively, improperly called blood-horses, when it hath nothing to do in the case, any further than nourishing the body; but their activity and lively disposition depend wholly on the spirits and electric fire contained in them. Others are heavy, dull, sluggish, and inactive, destined by nature for the collar: The principles contained in their bodies are either entangled by salt and earth, or being too much impregnated with humidity, are obscured; for if there be too great a portion of it, those elements are too much separated or divided, so that from hence it is, that they exert themselves feebly; from which proceeds their sluggishness and inactivity, as also their moist disposition; as appears by
many

many of this kind breaking out and running at their heels, which is vulgarly called the grease.—Some are subject to a discharge called the running-thrush, which is no other than the ferous part of the blood descending to those depending parts, which beneficent Nature has contrived for the preservation of the creature. There are others of the heavy kind that have no such discharge, but have gummy and swelled legs; but such swellings may be attributed to negligence and bad usage; for if proper care be not taken of such horses, it is impossible to keep their legs clear of these maladies.

AN afs is a strong, long-lived, melancholy, and stupid animal, which proceeds from a larger portion of the principle or element of salt contained in its body, than most other creatures; and a less proportion of spirits and electric fire, which is the reason of their strength and long life; and I believe their melancholy and stupid disposition depend thereon.

SOME animals are endowed more with electric fire than others, particularly cats, by which there is a common saying,—that they have nine lives; for when they are to all appearance dead, in a little time life will appear: The reason is, the electric fire contained in their bodies, (of which they have so large a portion) neither evaporates nor is much entangled, by means whereof they almost
immediately

immediately recover; which is the cause of the saying above-mentioned. Where the electric fire abounds with a portion of earth, it will appear visible; for not only the hair of cats, but that of horses, when rubbed or agitated, will emit light in the dark. Not only animate but inanimate bodies have likewise a portion of this electric fire; as moor-land (called peat-earth) and rotten-wood.—Fish or flesh, when putrefied, will emit light in the dark; as also quicksilver, when shaken in vacuo; and sea-water, in a storm, will do the same. Those fermentative particles are embowelled in the earth, which is evinced by earthquakes in divers places; the sinking of hills and raising of vallies, nay, the destruction of whole countries has been the unhappy fate of those places situate near burning mountains. Those countries being more impregnated with fermentative particles than many other parts, the Author of Nature has contrived volcanoes as outbreaks of electric-fire, and their eruptions for their preservation.

It is my opinion that earthquakes and volcanoes proceed from a sulphureous and mineral substance, which, when it receives moisture and air, agitates and breaks forth into flame: For by an experiment I have tried with sulphur and filings of iron compounded together, by laying some time, agitated and took fire.

THE electric fire also makes its appearance in mines and coal-pits, and many are suffocated thereby. It is also diffused through the whole atmosphere, as is evident by that electric fluid called lightening: Also the aurora borealis, or northern lights, which are streams of electric fire dispersed through the aerial expanse. I have sometimes observed this phenomenon in the west, and other directions; and I believe it is stronger from the time of sun-set 'till midnight, than from midnight to morning, which may be occasioned by the revolving of the earth from west to east, which I apprehend may cause a rarefaction on one side, and a condensation on the other. Meteors, &c. which sometimes make their appearance in the form of balls or globes of fire, are also electric bodies; nay, I believe the end of all things will be by it; for Scripture says, "That the elements shall melt with fervent heat;" which must be those of which all sublunary bodies are composed.

Not only these, but stones and minerals are impregnated with such fermentative particles, by which they grow and increase. Accretion and maturity in vegetables, depend upon the union and mutual adhesion of their principles, from a crude juice and the electric fire, by which they come to maturity; and on which the sweetness, smell, and delightful colour depend.

THE electric fire likewise manifests itself many other ways, as in that of hay growing hot, which is called sweating; for when the spirits begin to evaporate, the remaining particles of electric fire being very much agitated, are apt to acquire heat, and being united with a closer contexture, are so remarkably endowed therewith, that it sometimes takes fire. When hay is laid up too moist, if it does not by a proper effervescence acquire heat sufficient to force the moisture to ascend, it grows musty or mouldy; for should it dry up, it is without taste or smell: But if the particles of electric fire be violently moved, they rouse those which are next them, and thereby excite them to the like method of conflagration. Also manure or dung laid in heaps, grows hot and ferments, by the particles of electric fire violently breaking forth, which causes it to emit a fetid smell, and promotes its putrefaction.

THE electric fire appears much in the same manner in the wheels and axles of carriages, which, when they are in motion, become hot, for want of oil or something of an unctuous nature, to liquefy and keep those particles that are in the wheel from uniting with those of the axle; for when roused by friction, they violently seize each other, and uniting together, break out into fire or flame.

Decrease

Decrease of the animal Body.

WHEN the animal body is arrived to its most exalted state of perfection, it continues not long in that condition, but hastens to a dissolution; for the finest particles of the spirits and the electric fire first evaporate, and so gradually and insensibly continue: Then the body, particularly that of the human species, begins to feel the effects of violent exercises in their youth; as hard labour, running, jumping, lifting or carrying great weights, and dancing; nay even singing, or any other way whereby the electric fire is too impetuously roused: Its effects do not immediately appear in youth, for if they be ever so weary, after receiving rest and nourishment, they appear to be as vigorous as before: But when those principles or elements begin to evaporate, then they find the effects thereof, such as nocturnal and rheumatic pains, lameness, contracted members, and chronic diseases. Sometimes they fall victims to the excessive passions of joy, sorrow, and anger: Though all do not find the ill consequences for the present, yet it is sure to have its bad effects in the body as well as mind; as melancholy fits; nay, many other evils are derived from the electric fire being thus violently agitated, as watching, want of appetite, &c. It also hurts digestion, of which I shall define thereon, and shew how and in what manner it is performed.

I remember to have read in some author, That animal digestion is the dissolving or separating of the aliments into such minute parts, as are fit to enter into the lacteal vessels, and circulate with the mass of blood ; which is promoted by the electric fire being gently moved, and causes the animal spirits to flow in abundance to the stomach, which is the reason that digestion is better performed in the day-time than in the night, or during sleep ;— because, when awake, every creature breathes thicker, and the midriff, nay even the muscles of the whole body are more exercised, and the stomach oftener compressed, especially by gentle walking ; for while the body has exercise in a moderate degree, digestion is more effectually and expeditiously performed, than while in idleness and without motion : This does appear from the very countenances of the sedentary and studious ; more especially, if they betake themselves to work soon after eating ; by this their countenances look pale and wan ; the reason is, their minds are so diverted, that respiration is more rare or seldom. We do not then fetch our breath near so often as even when we are asleep, which is a very bad situation for digestion. Therefore it is necessary for the studious to unbend their minds by some kind of pleasure or gentle exercise, to easily agitate or move the electric fire, that the animal spirits may flow in abundance to the stomach, for some time after eating,

ing, to forward digestion. If the mind be taken up with the resolution of study, this determines the animal spirits towards the brain, wherefore Nature designs them at that time, for the use aforefaid.— It is also observable that we digest better in winter than summer; because in winter, to drive away the sense of cold, we are often put upon exercises and greater activity, than in the summer season; as likewise the muscles and solid parts are more dense and firm, consequently stronger in their contractions and attractions.

THERE are some persons, who by too intense an application to study, are disordered in their senses and deprived of reason, which proceeds from the mind or cogitative faculty being taken up with dark and abstruse questions, or the like, which cause the animal spirits to flow abundantly to the brain, whereby they become worse than idiots; which is from want of amusement or exercise of some kind, to vanquish those gloomy objects from the mind, which certainly is the cause of such deplorable circumstances. The mind being too intent upon any object (as is evident by some seemingly religious persons), by the too intense study of that before them, their understandings become cloudy and darkened, whereby they are disordered not only in mind, but also it preys upon the nerves, and affects the whole body. It is indeed a lamentable case, that nothing in the creation can withdraw their attention from this so rigorous a study. LEST

LEST I tire the reader's patience with this tedious digression, I must return to where I left off, viz. to the decrease of the body; for all or most of these ill effects being combined together, then it finds not only its strength and activity impaired, but cannot withstand emergencies as usual; as running, walking, or any other exercises; nay even cold, not having the electric fire to warm, nourish, and strengthen the body. It is observable, that as those principles or elements evaporate, the blood is less in quantity, by which the body is deprived of its nourishment; consequently if any bone be broke, or any member strained or wounded, it will not so soon knit or recover strength, or be healed, as when those elements are in their fermentative vigour; as also their visage or countenance, particularly the female sex: That the electric fire generally abounds more in them than men, is evident by their delicacy, pride, and gestures; with the desire of knowing their fortunes, and affecting the company of men: What I mean by this, is their inherent love of sweethearts. But when they come to bring forth children, the lillies and the roses which Nature has implanted on the cheeks of those blooming, lovely, and beautiful creatures begin to fade. The electric fire does not evaporate but by its genial heat, and converts the aliment received into the body to chyle, that it may circulate with the mass of blood, as appears from their catamenia, which, after conception,

ception, ceases : The superfluous blood, by divine appointment, is for the nourishment of the foetus ; and when the electric fluid begins to evaporate, they gradually decrease in strength, the blood is diminished in quantity, and then they leave off bearing children ; as it continues to evaporate, the catamenia ceases, and the blood only serves for the nourishment of the body. It is then that their charms are vanquished, their countenances altered, and most of them appear pale and wan.

It likewise appears that the politic schemes of women, and their sharp and witty answers, are caused by the spirits, though their wit is not solid but wavering, for there is a great flow of animal spirits to the brain ; whence all sense is derived, by which many of them have it at will, by means of so great a portion of electric fire, from which their beauty proceeds ; and it causes such a plenitude of animal spirits, that they seldom fail in obtaining their desires. Man cannot withstand the temptations which those angel-like creatures lay before him, without assistance from the powers above ; as is evident by *Adam*, who, though in innocence, could not resist the loving and persuasive words of *Eve*, who, no doubt, was an emblem of Heaven's good-will towards man. For at first she was created innocent, lovely, and beautiful, as *Milton* has lively described her :

Grace was in all her steps, Heaven in her eye,
In all her gestures dignity and love.

But

But this was only while she retained her native innocence ; for as soon as Satan found her alone, that is, without any aid or assistance but the innocence which she possessed, thinking that sufficient, he then attacked her, well knowing the frailty and weakness of woman, and also how easy it was to persuade her ; and by his stratagems and subtle wiles enticed her to eat the forbidden-fruit. No sooner had she plucked and eaten, but fell lust and all the furies attended : Temptations and diseases of all kinds ; which not only changed the beauty of her body, but that of her mind. For all *Adam* knew that time would change her outward beauty, and that she had likewise lost her innocence, which was the chief ornament, being deprived of peace and happiness ; he knew also the divine command : Yet the love he had for her, and the influence which she had over him, rather than he would be separated from her, would likewise share the same fate ; transgressing that command, by eating the forbidden-fruit, which he knew would bring woe and misery upon himself and his posterity, which has increased, and is still increasing at this day. Though it was said the seed of the woman was to bruise the serpents' head, and he was to bruise her heel ; yet I think he not only hath the power which was given him over the heel, but hath extended it to the head also. For if any man should come from a distant land, where he had never seen a woman in the garb and attire which the greatest part of them wear upon their heads,

heads, with the modesty and impudence of many, I really believe he would not think them of the human species; for there are numbers of them who have parted with shame, cast away modesty, and sold chastity; following their own inclinations, gratifying the lust of the eye, the lust of the flesh, and the pride of life, by giving way thereto, and eagerly fulfilling their unruly lusts; which not only renders them a bane to society in this world, but they are likewise deprived of happiness in the next.— Now if they were only to consider this and seek for Divine aid and assistance, there would not be so many prostitutes (as is the case), nor young and unmarried women with child, as there generally are, which is a scandal to this nation. The cause thereof is the great opinion and strong resolution they have, thinking it is in their power to withstand all the temptations in the world, and that nothing can beguile them: But those resolutions frequently fail when they stand most in need of them. And my opinion is, that these young creatures are to be pitied, seeing it is out of human power to resist such temptations, without applying to the means mentioned above.

BUT for all there are so many enormities among them, yet I am fully persuaded, that if ever any effectual reform be made either in church or state, it must be by women: For as woman was an agent of Satan in ruining man, they must be the instruments

ments of Christ in restoring the golden age, lost by sin and transgression: For that which is capable of doing the most harm, may be converted to the greatest good. Now the women of this land being blessed with comeliness and beauty, it being situate in one of the temperate zones, not tanned by the scorching heat of the sun in summer, nor chilled by the nipping frosts of winter, but is under a clime between the two extremes of cold and heat; a land which almost resembles Eden; then it is most probable the women thereof are to begin the reformation. May Heaven incline the heart of our glorious Queen to begin so necessary and desirable a work: She who is blest by all the graces; being a pattern of piety, innocence, and virtue; and by her loving endearments to the King her husband, of which I am sensible he is not ignorant; that she may have so much influence over him, and by her persuasions, he may enforce a law to punish all ungodliness and wickedness: Then would the noble matrons, by their love and obedience, so gain the hearts of their husbands, that they would effectually reclaim them: Likewise those in power, exerting themselves according to their abilities, by putting in force those laws which their sovereign had made for the punishment of the profligate of both sexes: “Then will true holiness flow like a river, “and righteousness as streams, running down from “the prince to the peasant; and then the voice of “the

the swearer would be no more heard, nor the drunkard seen staggering about the streets, or the gamester at his game; and many other enormous sins would be erased from the earth: Neither would there be any defrauding or cheating one another, but every one would act honestly, and do no other to any than what they would have done unto themselves. Likewise those profligates, (lewd women) those instruments of Satan, would be ashamed, and no more seen by their politic schemes to entrap men; who I believe, destroy more than are slain by the sword. Then the young women of this land would not garb themselves in rich and costly attire, which the greatest part of them are guilty of, and have transformed the beautiful Image in which woman was first created, by their superfluous and extravagant fashions, and monstrous head-dresses, which they imagine will draw lovers to them: But they are deceived; for their admirers and lovers are only the reprobate, who by their lies and fair speeches, want only to deceive and betray: But the others being clothed in decency and plainness, with ornaments of sobriety, modesty, and chastity, being blessed with innocence, love, and beauty, with these accomplishments lovers would resort to their houses like doves to the windows. Now they well knowing that Heaven intended woman to complete the happiness of one man only, they therefore make application to the

Divine Being for assistance, in so weighty an affair as marriage; and they, by following their Guide, are enabled to withstand those temptations their own inclinations might naturally lead them, which, had they given way to, would have brought an innumerable train of evils hereafter. And though they are unmarried, by obeying the precepts and following the examples of their superiors, they will despise the loose and reprobate men, and the temptations of keeping their company will entirely vanish. Then will woman answer the end for which she was created; viz. To complete man's happiness not only in this life, but assist him to prepare for that which is to come. Although man was placed in Eden, yet Providence did not think him completely happy until an helpmate was provided.

Now if all wives were such as mentioned above, then would they be the glory of this isle, praise of the nations around, and the admiration of the whole earth. Amen.

Of the Decay of the animal Body, or old Age.

THE decay of the animal body is from a separation or division of the elements. The bonds of mixture being partly dissolved, a great portion of
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the spirits and electric fire first evaporate, which cause the body to become inactive; and if any emergencies befall it in its youth in any particular part, by falls, bruises, strains, broken bones, or the like, those parts being most destitute of them, are subject to pain; and if it should by chance fall on the joints, the sinews are contracted, and those parts wither and become lame, though the other parts of the body appear not much altered in that respect. There are others who have been abused by bruises in divers parts of the body, and when those elements begun to evaporate, have been succeeded by continual pains; nay, the contraction of all the fibres of the body, by which it is very much distorted: While others who have had no such abuses are without pain, and appear active and lively, though in old age.

THERE are some when they come to an advanced age, have out-breakings and running sores in divers places, but mostly the depending parts; particularly the legs, which very much swell and causes intolerable pain, so long as they remain in that state, until the ferous blood breaks forth, as sometimes happens, by reason of too great humidity; for as the elements evaporate, the blood turns watery:—Hence those swellings proceed, especially in hydropic persons, and particularly women, for when they come to an advanced age, their legs begin to swell, which is occasioned by a bad habit of body.

For

For if the skin be torn by ever so slight a scratch, and proper care be not immediately taken, the ferrous blood will descend to that part, by which it is rendered almost impossible to be healed: But if it could be effected, would endanger its falling upon some nobler part. So they must be patient under these circumstances, and not run from one who professes surgery, to another, and so on, who will all pretend that they can cure them, and so they must pay their money without receiving any or very little benefit. Much like that celebrated Dr. *N——m*, who pretended, when at York, he could make a cure of a butcher's wife, a poor, lame, old woman, who had a stubborn ulcer on her knee, which he pretended to perform in the space of a month or six weeks, so that she might walk, and do business as formerly. But all his vain endeavours proved abortive, and she still remains lame and uncured. Had she at first applied to a skilful surgeon, it might have been healed at a trifling expence; for in comparison, he is almost as ignorant respecting the nature of diseases, as the ass on which I ride; and is the most noted impostor who ever travelled the country. His only art was to get money from the poor, deluded people, who gave him a fee of five guineas before he would begin, and another when he left off, without performing many cures, except to those unhappy persons whom he helped forwards to their graves; who

were

were perfectly cured indeed ! If by chance one or two were restored by him, and ten died under his care, those who were cured would make far more noise than those who were committed to the grave ; for you know that dead people tell no tales. How was it possible for him to cure all diseases, as he pretended, by applying a liquid caustic and plaster to any part of the body ? It is really surprising to think any one possessed of common sense, should imagine the sick, blind, and lame, would all be cured by a blister !

THERE are others of his brethren the quacks who travel the country, and call at every house, leaving hand-bills, wherein are described the disorders cured by them, and call with their nostrums to cure all diseases the next day, which the poor, unthinking people, believe to be true : So they buy those hotch-potch compositions prepared for this and the other complaint, without in the least considering, that in a depraved state of health every minute circumstance ought to be considered, in order to prescribe proper medicines for the cure thereof. Sometimes there is a complication of disorders, which require the attention of the physician : But these itinerants pretend to compose their nostrums of such ingredients, as will cure or relieve all complaints, though they are quite of different natures and entirely opposite ; by which those ignorant people find the effects thereof, when too late ;
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and instead of being cured or relieved, their cases are made worse. As those ignorant pretenders seldom stay long in one place, they leave the cure of their patients to Providence and Nature, which would perform it better without them. If these men can only prepare a dose of physic, let blood, and draw teeth, they think themselves qualified to commence doctors, and travel the country. There is one of this stamp named *D——s*, who travels those northern parts, and has acquired his experience (as he calls it) both by sea and land; though he has travelled only to Greenland; which is sufficient to qualify him for one of this sort of doctors: But thus much I must say (and to his praise be it spoken), that if he does them little good, he will do no harm, any further than taking their money; which is more than I can say of most of this itinerant tribe. There is another set of men who fill the newspapers with their fulsome nonsense, specifying the cures they have and can perform: But only turn over the leaf, and there is nothing but blank; scarce any mention is made of those who have languished under divers diseases being perfectly cured; whereas if one in an hundred be relieved, there are certificates, letters of recommendation, &c, of this and the other complaint cured by their pills, powders, boluses, cordials, tinctures, &c.—Indeed he must be a good scholar who can enumerate one half of those hodge-podge compositions,
prepared

prepared as medicines to cure all disorders incident to the human frame. Some of them I do believe, are men of good natural abilities, and skilful in their profession; and many of their medicines might answer a good end, if they were to attend their patients and administer them properly. But vended about the country as they generally are, and falling into bad hands, who administer them improperly, not knowing but they will cure all complaints as specified in the papers, and so continue one dose after another, until their constitutions are entirely ruined: Not but some are restored to health whose disorders have puzzled the art of the physician. The reason is, that where the constitution is strong, and the body of ability to bear the shock those quack medicines give to the whole animal system, then they dislodge the disease: But when they are administered to a weak and depraved constitution, it may be compared to timber in building, being placed upon an old, decayed, and tottering wall; when weight comes thereon, all fall down together. So those quack medicines, being also administered to decayed and weak constitutions, and continued for some time, raise a ferment in the body, which causes the elements to evaporate, and death ensues.

THERE are other romancing doctors called mountebanks, who exhibit their nostrums upon a stage, and have a man called a fool, wire-dancer, and what not; who by his apish mimicry so bewitches the

thoughtless and ignorant multitude, that if they have but one shilling, they must throw it up to the wonderful empiric, in hopes of gaining a prize ; for he, as a bait to allure them, gives many things of much greater value than his phyfic, in the manner of a lottery, which every one expects to gain. When the people seem backward in giving this pretender their money, the man called a fool (though not so foolish as his audience) draws off a comical tale ;—which ended, the doctor harangues the ignorant and gaping multitude, and gives them a history of the cures he has performed, and like the rest of the fraternity, can cure every disease incident to the human frame. But these avaricious quacks, not content with their share of business at home, must travel the country to deceive the people, by selling their nauseous stuff and enticing from them their money : This they do with the most consummate effrontery, though they have no other motives than that of enriching themselves, being altogether regardless of the peoples' infirmities, by which the constitutions of those poor, innocent dupes, are intirely destroyed. I can not deny but some of them (particularly the *Greens*) were noted surgeons ; but what then ?—they only wanted money. If those pretended sons of *Æsculapius* could perform one half the cures they pretended to, they had no need to travel or ride post for bread.

THERE are others called mad doctors (some of whom are not less so than their patients), who had almost escaped my notice; but by chance I espied one of them, eminent for his blundering performances without judgment. It would puzzle a priest and his clerk too, to enumerate all the species of those pretenders, who are many of them worse than highway robbers, who only take money; but the other take money and life also. Scarce one of them can give a satisfactory reason for the nature and cause of the disorder with which their patients are afflicted, but administer their poisonous potions, too bad to give a horse, without their being let blood, which is the most necessary means of laying a foundation for the cure of such disorders, which proceeds from the electric fire being roused, and by its subtle power raises so great a ferment, and causes the animal spirits to flow with such impetuosity to the brain, that it renders them distracted and mad. My reasons for letting blood are, that where the electric fire abounds, the blood is more in quantity, and it is surely it that makes such ravages; and to lessen that quantity, when the electric fire rages to so high a degree, must be the only means; for then the blood vessels are so full that they are ready to burst, and the patients are sometimes attended with bleeding, which is an almost certain sign of death. I have been the more explicit in this, for reasons best known to myself.

MELANCHOLY is entirely opposite to the above, it being occasioned from the electric fire being almost extinguished ; by which means the blood becomes poor, weak, and languid ; whereby the animal spirits flow slowly, so as to occasion this low-spirited state of the mind, which will continue and end in death, except there can be raised a ferment in the body, that the animal spirits may flow more abundantly to the brain, which is the seat of sensation.

ALL these circumstances considered, it appears to me, that the greatest part of mankind die an unnatural death. Some are deprived of life by accidents, famine, and the sword : Others destroy themselves, as by self-murder, cohabiting with bad women, &c ; for the electric fire being roused, and not quenched in its first breakings-forth, communicates itself to other parts of the body, and corrupts the whole mass of blood ; whereby is occasioned so great and continual a ferment, that it causes the elements to evaporate, and they likewise perish.

BUT if mankind would cease from intemperance, and refrain from animal food, as in the first age of the world, when men lived upon the simple productions of the earth, and their drink only water, and not of fermented liquors and made-dishes, which are forerunners of divers diseases, they then would be stronger and attain to greater age : For

as soon as mankind began to live upon animal food and made-dishes, they were not only weaker, but their life was shorter than before. But there are a greater number than any yet mentioned, who are cut off at all ages by divers diseases, as the stone, gravel, small-pox, fevers, &c, who can not be said to die a natural death, when there are so many auxiliaries to cause the elements to evaporate : And I make no doubt but Divine Providence, whose care is over all his creatures, hath made the earth to produce medicines, which, if they could be found out and properly administered, would cure most of the diseases to which our frail bodies are incident, since our first parents fell by sin ; and by which many might attain to old age, but not by quack medicines. Though I will not deny, but there are a small number among the great multitude of people who are in the world, who at all ages die a natural death. And I am of opinion many more would attain to the same, were it not for the young and unexperienced doctors ; as also others who practise much by receipts, only studying to cure the symptoms of a disease, without in the least endeavouring to remove the cause, which is a very erroneous way indeed ; for if it was removed, its effects would cease. There are others worse than quacks, who, when they are baffled with a disease, must try experiments ; if one thing will not do they give another, which cause their patients to languish out their few
fleeting

fleeting moments in pain and misery : For there being raised so great a ferment in the body, causes the elements to evaporate, and they go the way of all flesh. Now when all these different ways whereby mankind are deprived of life are summed up together, and every circumstance considered, it appears to me that the major part of the human species die an unnatural death. The reason is clear ; only observe between it and that which is natural ; In the former, the elements gradually evaporate, and according to their different division or separation, the dissolution of bodies differently depend ; for the finest particles of the spirits and electric fire first evaporate, and the grosser remaining entangled by salt and earth for some time, both them and the other elements receive a flux together, and they instantly expire. Now that which is natural, whether in childhood, middle, or old age, passes away as though they were asleep. My mentioning it brought to my remembrance a singular case, which is as follows : One day as I was writing as usual, being weary left off ; I was sitting with a pen in my hand, and it being very hot weather, I grew drowsy and fell asleep ; the pen falling from my hand to the ground, I awoke. This circumstance caused me to consider the nature thereof, and how it was brought about ; which appeared to be caused divers ways, and those entirely opposite to each other, which rendered it difficult to account for ; but I shall make it appear to the best of my understanding.

THE first cause that I shall treat upon, is, That when the body is fatigued by exercise or hard labour, it being deprived of part of the nourishment of perspirable matter, evaporating or flying off through the pores of the skin, which is occasioned by the electric fire being too much agitated, so as to cause the animal spirits to be exhausted, as is evident by the sleep of a labouring man: For *Solomon* sayeth, “The sleep of a labouring man is sweet, “whether he eat little or much,” which is evident that the greatest strength and most nourishment are received when asleep; and as the body receives it by degrees, the animal spirits and all its faculties are renewed as they were before. Not but sometimes the body is so fatigued by the electric fire being roused to so high a pitch, as to cause the animal spirits to be so much exhausted, that the body can receive no rest or nourishment, and sleep is entirely taken away. Watching is also caused by many other means, though the animal spirits are not exhausted; which proceeds from the electric fire, laying as it were, dormant and unmoved, and by that means the animal spirits continue unexhausted, and the greatest part of the old nourishment still remains: And when more aliment is administered, it not only clogs the stomach, but causes uneasiness and watching: For *Solomon* says, “The “abundance of the rich will not suffer them to “sleep.” Also when the body is afflicted by sickness

ness or pain, it depresses the spirits, though they are not other ways exhausted, and rest and sleep are taken away : For as they are the liquor of the nerves, it must be them which are the cause of sleep and watching ; as appears by opening and shutting the eye-lids. The electric fire may be sometimes too much agitated, and occasion watching, as mentioned above.

THE next way by which sleep is caused, proceeds from the pressure of the atmosphere upon the vessels which contain all the fluids of the body ;—consequently must squeeze or force them forward : by that means the animal spirits are sooner and more exhausted, than when there is a serene and clear air.

PERSONS are subject to sleep when they have been exposed to cold, and by a sudden change from that to heat, which is occasioned by the electric fire being immediately put into action. By that means the animal spirits are almost instantly exhausted, which I believe is the cause thereof.

SLEEP is likewise caused by the electric fire being roused to a high degree in hot seasons, whereby the blood is rarefied, and consequently extends and fills its vessels more than in cold weather ; by which there is too great a portion of nervous fluid or animal spirits, which undoubtedly consists of the
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most minute or smallest particles of the blood screened or separated therefrom, through the glands, which the Author of Nature has contrived for that purpose, by means of the air in the lungs and electric fire: For by its penetrating and subtle power, all the fluid secretions of the body are promoted.

THERE is another way by which sleep is occasioned; and that is, by drinking fermented liquors, &c, which raise a tumultuous ferment in the body; for the electric fire being exceedingly roused, causes the animal spirits to be exhausted, and then sleep is requisite, that there may be a renewal of them. There are many other ways by which sleep is caused; but I shall mention only one more, and then proceed to natural death.

SLEEP is caused by some drugs and plants; particularly opium, and its preparations; cornrose, garden poppies, hemlock; and smoaking or chewing tobacco, to those unaccustomed to it, which operates much in the same manner as fermented liquors. There are also other narcotics too numerous to relate: For sleep is occasioned almost in the same manner as related before, by causing the animal spirits to be exhausted, and lulls the body asleep. But if too great a portion be administered, it will cause them to be so much exhausted, as to occasion the elements to evaporate, and they depart this

life in that state. As sleep is something similar to death, I shall shew the cause thereof to the best of my judgment, which is as follows: When the bonds of mixture which bound the elements together and prevented them from evaporating, are parted asunder and broken, they receive a flux all together; then the body departs this transitory life, without sigh, groan, sickness, or pain; but is as though fallen asleep. Now when these elements have disengaged themselves from the body, the external humidity remaining, soon exerts itself, which in a little time turns the same to putrefaction: Then the corruptible part must return to its mother earth, and the immortal soul ascend to Him that made it, which will assuredly reap its reward for the deeds done in the body, whether they be good or evil;—the one will be rewarded with eternal happiness and glory, the other with everlasting torment and misery.

HAVING now communicated the result of my thoughts honestly and truly, as far as my weak abilities would permit, I submit them to the judgment of the judicious, impartial, and unprejudiced reader, hoping if there only be found three, two, or one remark worthy of notice, they will not despise the whole for that one's sake.

I am induced to insert the following address
to the

Monthly Reviewers,

Should it come under their notice.

I Having presumed to commence author, but being fearful this my performance (which appears in a rude and imperfect state) should be investigated by you, and condemned to undergo too severe a punishment, by your severing its head from the body, pulling out its entrails, and dissecting and mangling every organ; which, should this be its unhappy fate, me and my work will be in a ruinous condition,—I being denominated a Quaker, but was excluded the privilege of their society for publishing this pamphlet. Therefore I thought it proper to relate their proceedings, and request you to be judge between us; hoping to find more favour and justice at your hands, than amongst many of them. They alledged I had deviated from their established rules—which was done in ignorance, it not being on a religious subject. But all availed nothing; for they had appointments and visited me several times, persuading me to desist from this my intended publication, and return the subscription money: But it was too late, for some of it was expended. Besides I had many respectable friends and subscribers whom I would not disoblige, so persisted in my intent to publish.

Then

Then they reported to the meeting that I still remained obstinate, which gave such offence, that they immediately drew up a paper of course, which was done in form and signed, specifying they had no further religious fellowship with me, for publishing a pamphlet, when at the same time part of it was to write. Now do not you think they were too hasty, in condemning of that which they had not seen? But I suppose they thought as a young woman did, in a tale that I have heard; which was thus,—A young man and woman being in a room, sitting at a distance from each other, the girl cried out and said, “Wilt thou let me alone.”—He answered, “Who meddles or comes nigh thee.”—“Ah!” says she, “but thou wilt in a little time.” So I suppose they thought if this pamphlet were not published then, it would be at some time, and therefore thought it the safest way not to be behind hand in their proceedings.

BUT for all their ill will and calumny, there still remains with me an universal love, which is extended not only to them, but all mankind; with a desire that they may be favoured with all earthly blessing, and be enabled to direct their course, until they arrive at that port of safety and haven of rest, even the mansion of bliss; where there is no distinction between the king and the beggar, but all are made equal.—There criticism and excommunication will be no more.





